

NOMENCLATURAL CHANGES AND CLARIFICATIONS IN MEXICAN *ERIGERON* (ASTERACEAE)

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ABSTRACT

Two new names and seven new combinations are proposed in species of *Erigeron* previously classified as *Achaetogeron*. For ten validly named *Erigeron* species to which names as *Achaetogeron* have been applied, synonymies are given. An index is presented to the current disposition of all names in *Achaetogeron*.

As in many other genera of the Astereae as well as of the whole family, variation in pappus production exists among species of *Erigeron*. For example, the achenes of *E. mimegletes* Shinners are epappose, those of *E. philadelphicus* L. pappose. In *E. annuus* (L.) Persoon the ray achenes are epappose but the disc achenes pappose; in *E. narcissus* Nesom the disc achenes are epappose, the ray achenes pappose. The genus *Achaetogeron* A. Gray has been maintained as distinct from *Erigeron* by a loose and unstudied consensus solely on the basis of its paucity or lack of pappus bristles; however, evolutionary loss of pappus has occurred independently at least six times within *Erigeron* (Nesom, 1980). A number of the taxa described as *Achaetogeron* were early transferred to *Erigeron* by E. L. Greene (1891), and I am transferring the remainder of the taxa that I consider worthy of recognition.

Several papers in preparation will present systematic studies of the groups including epappose species and will report new species, comparative morphology (including illustrations) and geography, chromosome numbers, phylogenetic hypotheses, and classifications of the species involved. I am here validating the following new names and combinations as well as clarifying synonymies in order that they may be validly and correctly used in studies of Mexican floristics.

NEW NAMES

1. *ERIGERON janivultus* Nesom, comb. et nom. nov.

Achaetogeron linearifolius S. Watson, Proc. Amer. Acad. Arts 26:139. 1891. TYPE: MEXICO. MEXICO: bluffs and plains near Flor de Maria, 4 Sep 1890, C. G. Pringle 3242 (HOLOTYPE: GH!; ISOTYPES: CM! ENCB!, MEXU 2 sheets!, MSC!, NY!, PH, UC 2 sheets!, US 2 sheets!).

Achaetogeron ascendens Greenman, Proc. Amer. Acad. Arts 41:254. 1905. TYPE: MEXICO. HIDALGO: meadow near Buena Vista Station (Cuyamaloza, Sierra de

Pachuca), 2490 m (8300 ft), 4 Aug 1904, C. G. Pringle 8851 (HOLOTYPE: GH!; ISOTYPES: CM!, ENCB!, MEXU 2 sheets!, NMC!, NY!, PH, UC!, US 2 sheets!).

The first *Achaetogeron* epithet is occupied in *Erigeron* as *E. linearifolius* Cavanilles. *Erigeron adscendens* Turczaninow was described in 1851; thus, to avoid confusion I have chosen a new name for this species, especially since one of Pringle's collections was distributed with incorrectly printed labels as *Achaetogeron adscendens*. The new epithet refers to the countenance of Janus.

2. ERIGERON *narcissus* Nesom, comb. et nom. nov.

Achaetogeron filiformis Larsen, J. Wash. Acad. Sci. 38:199. 1948. TYPE: MEXICO. TAMAULIPAS: vicinity of Tampico, 15 m, 10 Mar-19 Apr 1910, E. Palmer 249 (HOLOTYPE: MO!; ISOTYPES: CAS!, DS!, UC!, US!).

The *Achaetogeron* epithet is occupied in *Erigeron* as *E. filiformis* Sprengel.

3. ERIGERON *griseus* (Greenman) Nesom, comb. nov.

Achaetogeron griseus Greenman, Proc. Amer. Acad. Arts 41:254. 1905. TYPE: MEXICO. DURANGO: vicinity of the city of Durango, Apr-Nov 1896, E. Palmer 821 (HOLOTYPE: GH!; ISOTYPES: UC!, US!).

Bellis garciae Blake, Contr. U. S. Natl. Herb. 22:593. 1924. TYPE: MEXICO. DURANGO: state of Durango, 1000 m, P. Ibaña Garcia 310 (HOLOTYPE: US!). *Achaetogeron garciae* (Blake) Larsen, J. Wash. Acad. Sci. 38:201. 1948.

4. ERIGERON *guatemalensis* (Blake) Nesom, comb. nov.

Astranthium guatemalense Blake, Brittonia 2:335. 1937. TYPE: GUATEMALA: in open pine woods, along trail between Huehuetenango and Soloma, Sierra Cuchumatanes, Dept. Huehuetenango, 3355 m, 15 Sep 1934, Skutch 1239 (HOLOTYPE: GH!; ISOTYPES: F, LL!, NY!, US!). *Achaetogeron guatemalense* (Blake) De Jong, Publ. Mus. Michigan State Univ., Biol. Ser. 2:489. 1965.

5. ERIGERON *mimus* (Blake) Nesom, comb. nov.

Bellis mima Blake, Contr. U. S. Natl. Herb. 22:594. 1924. TYPE: MEXICO. DURANGO: Sierra Madre 48 km (30 mi) N of Guanacevi, 2400-2700 m (8000-9000 ft), 18 Aug 1898, E. W. Nelson 4786 (HOLOTYPE: US!; ISOTYPE: GH!). *Astranthium mimum* (Blake) Larsen, Ann. Mo. Bot. Gard. 20:30. 1933. *Achaetogeron mimus* (Blake) De Jong, Publ. Mus. Michigan State Univ., Biol. Ser. 2:490. 1965.

6. ERIGERON *polycephalus* (Larsen) Nesom, comb. nov.

Achaetogeron polycephalus Larsen, J. Wash. Acad. Sci. 38:200. 1948. TYPE: MEXICO. DURANGO: San Ramón, 21 Apr-18 May 1906, E. Palmer 52 (HOLOTYPE: MO!; ISOTYPES: CM!, UC!, US!).

Achaetogeron corymbosus Larsen, J. Wash. Acad. Sci. 38:201. 1948. TYPE: MEXICO. JALISCO: canyons, moist rocks, Tuxpan, Feb 1904, C. A. Purpus 527 (HOLOTYPE: GH!; ISOTYPE: UC!).

The long-accepted name for *Erigeron polycephalus* has been *E. leucanthe-*

mifolius S. Schauer (*Linnaea* 19:723. 1847.). The type of the latter species was collected in about 1845 by a German physician and traveller in Mexico, Alwin Aschenborn. From his collections of about 750 numbers, over 100 new species have been named. Although scattered collections of Aschenborn are now housed in K, P, and at least were present in B before World War II, the largest set now appears to be in the Herbarium of Wroclaw University (WRSL), Poland. An analysis of all the Types there is in progress. A preliminary analysis of Aschenborn's itinerary shows that most of his collections were made from the valley of Mexico or the high mountains immediately to the west of it. The species from the Sierra Madre Occidental long known as *E. leucanthemifolius* has never been collected so far to the east, and the 2 sheets of the type collection of *E. leucanthemifolius* examined from Wroclaw actually are *Erigeron karvinskianus* DC. (*Prodr.* 5:285. 1836.). Of the two names applied as *Achaetogeron* to this species, one is already occupied in *Erigeron* as *E. corymbosus* Nuttall.

7. ERIGERON subacaulis (McVaugh) Nesom, comb. nov.

Achaetogeron subacaulis McVaugh, *Contr. Univ. Michigan Herb.* 9:361. 1972.

TYPE: MEXICO. AGUASCALIENTES: Sierra del Laurel, near the Jalisco border, ca 15–16 km (10 mi) SE of Calvillo, above Rancho de los Adobes, in oak forest, 2500–2700 m, 26–28 Aug 1960, *McVaugh* 18434 (HOLOTYPE: MICH!; ISOTYPES: DUKE!, ENCB!, LL!, MICH!, NY!, US!).

8. ERIGERON versicolor (Greenman) Nesom, comb. nov.

Achaetogeron versicolor Greenman, *Proc. Amer. Acad. Arts* 41:255 1905. TYPE:

MEXICO. HIDALGO: meadows near Buena Vista Station, 2490 m (8300 ft), 7 Aug 1904, C. G. Pringle 8849 (HOLOTYPE: GH!; ISOTYPES: ARIZ!, ASU!, CM!, DUKE!, ENCB!, LL 2 sheets!, MEXU 2 sheets!, NMC!, PH, POM!, NY!, SMU!, TEX!, UC!, US 2 sheets!).

9. ERIGERON WISLIZENI (A Gray) Greene ssp. *purpurascens* (Greenman) Nesom, comb. et stat. nov.

Achaetogeron purpurascens Greenman, *Proc. Amer. Acad. Arts* 39:94. 1903. TYPE:

MEXICO. CHIHUAHUA: Sierra Madre, near Colonia Garcia, 2400 m (8000 ft), 27 Jul 1899, C. H. T. Townsend and C. M. Barber 175 (HOLOTYPE: GH!; ISOTYPES: NY!, MICH!, PH!, UC!, UNM 2 sheets!, US 2 sheets!).

CLARIFICATIONS OF SYNONYMY

10. ERIGERON CORONARIUS Greene

Erigeron coronarius Greene, *Pittonia* 2:167. 1891. TYPE: MEXICO. CHIHUAHUA: pine plains, base of the Sierra Madre, 3.2–4.8 km (2–3 mi) S of Guerrero, 27 Sep 1887, C. G. Pringle 1275 (HOLOTYPE: US!; ISOTYPES: GH!, MEXU!, NY!, PH!).

Erigeron howardi M. E. Jones, *Contr. W. Bot.* 12:45. 1908. TYPE: MEXICO. CHIHUAHUA: Colonia Juarez, Sierra Madre Mts., 1800 m (6000 ft), 12 Sep 1903, M. E. Jones s.n. (HOLOTYPE: POM 37622!, photo at US!). *Achaetogeron*

howardi (M. E. Jones) Blake, Contr. U.S. Natl. Herb. 29:127. 1945.

11. ERIGERON DELPHINIFOLIUS Willdenow

Erigeron delphinifolius Willdenow, Enum. Hort. Berol. 2:873. 1809. TYPE: in America meridionali, Humboldt and Bonpland s.n. (HOLOTYPE: B not seen, drawing by Klatt in GH!). *Diplopappus delphinifolius* (Willdenow) Cassini, Dict. Sci. Nat. 25:96. 1822. *Stenactis delphinifolius* (Willdenow) Cassini, Dict. Sci. Nat. 50:483. 1827. *Polyactis delphinifolia* (Willdenow) Lessing, Syn. Comp. 189. 1832. *Polyactidium delphinifolium* (Willdenow) DC., Prodr. 5:282. 1836. *Erigeron delphinifolius* Willdenow subsp. *delphinifolius* (Cronquist in Brittonia 6:263. 1947).

I recognize no infra-specific taxa within *E. delphinifolius*.

Achaetogeron fisheri Larsen, J. Wash. Acad. Sci. 38:200. 1948. TYPE: MEXICO. MEXICO: Amecameca, 2700 m (9000 ft), 29 Jul 1924, C. L. Fisher s.n. (HOLOTYPE: MO 914802!; ISOTYPE: ARIZ!).

Achaetogeron sophiaefolius Larsen, J. Wash. Acad. Sci. 38:200. 1948. TYPE: MEXICO. DURANGO: city of Durango and vicinity, Apr-Nov 1896, E. Palmer 158 (HOLOTYPE: MO!; ISOTYPES: MEXU!, NY!, UC 2 sheets!, US!).

12. ERIGERON FORRERI (Greene) Greene

Achaetogeron forreri Greene, Pittonia 1:155. 1888. TYPE: MEXICO. DURANGO: from the Sierra Madre W of Durango, 2430 m (8100 ft), Sep and Oct 1881, A. Forrer 110^a (HOLOTYPE: UC!; ISOTYPES: GH!, PH, NY!, UC!, US!). *Erigeron forreri* (Greene) Greene, Pittonia 2:169. 1891.

The Holotype at UC has no collection number besides the printed "A. Forrer", but the number "33." is penned in the lower left-hand corner of the label. The UC Isotype bears no numbers on the label. Each of the other Isotypes I have seen has "110^a" penned beside "A. Forrer". The labels on all the sheets are identical, with printed information. The plants on all the sheets are very similar in size and morphology, and it seems likely that all of them are from the same collection.

13. ERIGERON FRATERNUS Greene

Achaetogeron affinis A. Gray, Proc. Amer. Acad. Arts 21:386. 1886. TYPE: MEXICO. CHIHUAHUA: at the Frailes, about mid-height of the mountains above Batopilas, in shade under trees, Oct 1885, E. Palmer 255 (HOLOTYPE: GH!; ISOTYPES: MEXU!, NY 2 sheets!, PH, US 2 sheets!). *Erigeron fraternus* Greene (nomen novum), Pittonia 2:169. 1891.

Erigeron tenuicaulis M. E. Jones, Contr. W. Bot. 12:44. 1908. TYPE: MEXICO. CHIHUAHUA: hillsides E of Hop Valley, Sierra Madre Mts., 2100 m (7000 ft), in the Middle Temperate Life Zone, Sep 1903, M. E. Jones s.n. (This collection not located.). NEOTYPE—POM 39223! and ISO-NEOTYPE—POM 39221! designated here (MEXICO. CHIHUAHUA: mesa, W of Soldier Canyon, Sierra Madre Mts., 2100 m (7000 ft), 16 Sep 1903, M. E. Jones s.n.)

The epithet *fraternus* was applied by E. L. Greene as a *nomen novum* when he transferred *Achaetogeron affinis* to *Erigeron*. Five years later, in spite of his caustic references to earlier repetition of epithets in *Erigeron*,

he published the descriptions of another *Erigeron fraternus*, based on a different Type, considered by Cronquist (1947) to be a synonym of *E. glabellus*. *Erigeron tenuicaulis* is a heterotypic synonym of *E. fraternus*. The collection data cited by Jones for the Type collection of *E. tenuicaulis* are specific, but Blake (1945) observed that such a collection could not be found in the Pomona College Herbarium. However, he cites two sheets from Pomona "which agree so closely with Jones' rather careful description that I have little doubt that they are the actual collections cited and that the discrepancy in data is due merely to a different way of describing the locality". These two sheets are labeled as being collected in "Soldier Canyon". I agree with Blake that these plants match the description of Jones' cited collections from east of Hop Valley, but since printed labels on other of his collections from 17 Sep 1903 specify the location "W of Hop Valley", it seems possible that the Type collection actually has been lost. Judging from other printed labels and Jones' own account (1965), he collected in Soldier Canyon a day earlier (16 Sep 1903). Although Blake's assessment may be correct, there apparently is no way of knowing for certain; thus, I have cited the two duplicate sheets from Soldier Canyon as Neotype and Iso-neotype.

14. ERIGERON GALEOTTII (A. Gray ex Hemsley) Greene

Bellis mexicana A. Gray, Smithsonian Contr. Knowl. 5 (Plant. Wright., pt. 1): 93. 1852. TYPE: MEXICO. MEXICO: (no locality data), 26 Apr 1849, J. Gregg 701 (HOLOTYPE: GH!; ISOTYPE: MO!). *Brachycome mexicana* (A. Gray) Reiche, Fl. Excurs., p. 184. 1926. *Astranthium mexicanum* (A. Gray) Larsen, Ann. Mo. Bot. Gard. 20:32. 1933. *Achaetogeron mexicanus* (A. Gray) De Jong, Publ. Mus. Michigan State Univ., Biol. Ser. 2:489. 1965.

non *Astranthium mexicanum* (A. Gray) Larsen var. *chihuahuense* Larsen (= *Erigeron strigulosus* Greene)

Achaetogeron galeottii A. Gray ex Hemsley, Biol. Centr. Amer. 2:119. 1881. TYPE: MEXICO. VERACRUZ: in woods on the peak of Orizaba, 2400–3300 m (8–11,000 ft), June–Oct 1840, Galeotti 2166 (HOLOTYPE: K!, photo at US!). *Erigeron galeottii* (A. Gray ex Hemsley) Greene, Pittonia 2:168. 1891.

Gray apparently studied and tentatively annotated the Type collection of *Achaetogeron galeottii* during his studies at Kew in 1850-51. He had established the genus only a year earlier. However, it was not until 1881 that Hemsley (1881) published *Achaetogeron galeottii* with a Latin diagnosis in his account of Central American biology. In 1852, only shortly after his return to the United States, but apparently having forgotten the particulars about the nature of the specimens he had observed at Kew (or misinterpreting the variability within the species), Gray redescribed and named the same species on the basis of a different Type. The latter name, *Bellis mexicana*, was the one taken up for general usage. This commonly collected species was subsequently transferred with its well-known and geographically descriptive epithet to *Brachycome* to *Astranthium* to *Achaetogeron*, but upon reaching *Erigeron*, its nomenclatural niche is pre-empted by *E. mexicanus*.

Sessé & Mociño. Thus, Greene's generic combination of Gray's epithet commemorating Galeotti must stand as the correct name.

15. ERIGERON GILENSIS Wooton and Standley

Erigeron gilensis Wooton and Standley, Contr. U.S. Natl. Herb. 16:184. 1913.
TYPE: UNITED STATES. NEW MEXICO: Middle Fork of the Gila, 4 Aug 1900,
E. O. Wooton s.n. (HOLOTYPE: US!).

Achaetogeron chihuahuensis Larsen ex Blake, J. Wash. Acad. Sci. 30:470. 1940.
TYPE: MEXICO. CHIHUAHUA: vicinity of Madera, ca. 2250 m, 27 May-3 Jun
1908, *E. Palmer 301* (HOLOTYPE: MO!; ISOTYPES: CM!, DS!, NY!, US!).

16. ERIGERON OREOPHILUS Greenman

Erigeron oreophilus Greenman, Proc. Amer. Acad. Arts 41:257. 1905. TYPE:
MEXICO. CHIHUAHUA: Norogachic, southern part of the state, 2550 m (8500
ft), Nov 1885, *E. Palmer 419* (HOLOTYPE: GH!; ISOTYPES: MEXU!, PH!, US
2 sheets!). *Erigeron delphinifolius* Willdenow ssp. *neomexicanus* (A. Gray)
Cronquist var. *oreophilus* (Greenman) Cronquist, Brittonia 6:264. 1947.

Erigeron oreophilus Greenman forma *tenuilobus* Greenman, Proc. Amer. Acad. Arts
41:258. 1905. TYPE: MEXICO. SINALOA: Sierra de Choix, 15 Oct 1898, *E. A.
Goldman 255* (HOLOTYPE: GH!; ISOTYPE: US!).

Erigeron oreophilus Greenman forma *latilobus* Greenman, Proc. Amer. Acad. 41:258.
1905. TYPE: MEXICO. CHIHUAHUA: base of Mt. Mohinora, 12.8 km from
Guadalupe y Calvo, 2100–2250 m (7000-7500 ft), 23–31 Aug 1898, *E. W.
Nelson 4861* (HOLOTYPE: GH!; ISOTYPE: US!).

Achaetogeron pringlei Larsen, J. Wash. Acad. Sci. 38:200. 1948. TYPE: MEXICO.
CHIHUAHUA: cool slopes, Sierra Madre, 10 Oct 1888, *C. G. Pringle 1625*
(HOLOTYPE: MO!; ISOTYPE: UC!).

17. ERIGERON SEEMANNII (Schultz-Bipontinus in Seemann) Greene

Polyactidium seemannii Schultz-Bipontinus in Seemann, Bot. Voy. Herald, p. 301.
1856. TYPE: MEXICO. DURANGO: Sierra Madre, NW of Mexico, Nov-Jan
1849-1850, *Seemann 2026* (HOLOTYPE: K!, photo at MICH!; ISOTYPE: GH!).
Boltonia seemannii (Schultz-Bipontinus in Seemann) Bentham and Hooker,
Gen. Plant. 2:269. 1873. *Achaetogeron seemannii* (Schultz-Bipontinus in See-
mann) A. Gray ex Hemsley, Biol. Centr. Amer. 2:120. 1881. *Erigeron seemannii*
(Schultz-Bipontinus in Seemann) Greene, Pittonia 2:168. 1891.

18. ERIGERON STRIGULOSUS Greene

Achaetogeron palmeri A. Gray, Proc. Amer. Acad. Arts 11:386. 1886. TYPE:
MEXICO. CHIHUAHUA: shady woods on the summit of the mountains above
Batopilas, at about 2640 m (8800 ft), Aug-Nov 1885, *E. Palmer 362* (HOLO-
TYPE: GH!; ISOTYPES: MEXU!, NY 2 sheets!, PH, US 2 sheets!). *Erigeron*
strigulosus Greene (nomen novum), Pittonia 2:169. 1891.

Erigeron sylvestris M. E. Jones, Contr. W. Bot. 12:44. 1908. TYPE: MEXICO.
CHIHUAHUA: open woods, Soldier Canyon, Sierra Madre Mts., 16 Sep 1903,
M. E. Jones s.n. (HOLOTYPE: POM 39229!; ISOTYPE: POM 39228!).

Astranthium mexicanum (A. Gray) Larsen var. *chihuahuense* Larsen, Ann. Mo. Bot.
Gard. 20:32. 1933. TYPE: MEXICO. CHIHUAHUA: canyons of the Sierra Madre,
4 Oct 1888, *C. G. Pringle 2015* (HOLOTYPE: MO!; ISOTYPES: GH 2 sheets!,
MEXU!, MSC!, MU!, NY 3 sheets!, PH, UC!, US 2 sheets!). *Achaetogeron*
perennis De Jong, Publ. Mus. Michigan State Univ., Biol. Ser. 2:489. 1965.

19. ERIGERON WISLIZENI (A. Gray) Greene subsp. WISLIZENI

Achaetogeron wislizeni A. Gray, Mem. Amer. Acad. Arts, n.s. 4:72. 1849. TYPE: MEXICO. CHIHUAHUA: llanos, in the Sierra Madre W of Chihuahua, *Wislizenus* s.n. (HOLOTYPE: GH!). *Erigeron wislizeni* (A. Gray) Greene, Pittonia 2:168. 1891.

Astranthium mexicanum (A. Gray Larsen var. *chihuahuense* Larsen, Ann. Mo. Bot. MEXICO. CHIHUAHUA: cool, grassy slopes, rocky hills near Chihuahua, 19 Oct 1885, C. G. Pringle 303 (incorrectly cited by Gray as *Pringle* 103 (HOLOTYPE: GH!; ISOTYPES: CINC!, CM!, MEXU!, MICH!, NY 2 sheets!, PH, RSA!, US 2 sheets!). *Erigeron chihuahuensis* Greene (nomen novum), Pittonia 2:169. 1891.

The following may be used as an index to the disposition of names in *Achaetogeron*; following each *Achaetogeron* name is a number (in parenthesis) that refers to the currently accepted name in *Erigeron* in the text given above: *A. affinis* (13), *A. ascendens* (1), *A. chihuahuensis* (15), *A. corymbosus* (6), *A. filiformis* (2), *A. fisheri* (11), *A. forreri* (12), *A. howardi* (10), *A. galeottii* (14), *A. garciae* (3), *A. griseus* (3), *A. guatemalense* (4), *A. linearifolius* (1), *A. mexicanus* (14), *A. mimus* (5), *A. palmeri* (18), *A. perennis* (18), *A. pinnatifidus* (19), *A. polyccephalus* (6), *A. pringlei* (16), *A. purpurascens* (9), *A. seemannii* (17), *A. sophiae-folius* (11), *A. subacaulis* (7), *A. versicolor* (8), *A. wislizeni* (19).

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 JONES, M. E. 1965. Botanical exploration of Marcus E. Jones (P. A. Munz, ed.). Leafl. W. Bot. 10: 193-236.
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